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A paramount objective of the middle school is to further the self-development of its students in the several academic disciplines, study skills, problem analysis, and problem solving areas. The curricula content is determined by students and the professional staff members working with them. Emphasis is on individual growth with student involvement in program determination. The curricular frame of reference for middle schools is composed of four disciplines--social science, science, mathematics, and language arts. Activities and practices considered unacceptable to middle schools are self-contained classrooms, the use of professionals to teach one or two subjects, disregard of individual student interest, use of grades as motivators, fact regurgitation, and interscholastic athletics. Four examples of the program structure and organization of middle schools are provided. A further example is provided by tracing the development of a Midwest middle school. Middle schools emphasize that student programming be innovative and flexible. Scheduling is developed to fully utilize human resources while meeting student requirements. A 32-item selected reading list is included. (HW)

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# Perspectives on the Middle School

M. Ann Grooms

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# Perspectives on the Middle School

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*and*

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# preface

Many studies and investigations in the education of 10-to 14-year-old children indicates that new school programs are needed for this age group. *Perspectives on the Middle School* provides insight into the implementation of a middle school program and offers a new and different educational plan.

*Perspectives on the Middle School* emphasizes the importance of placing learning responsibility upon the student and the role of the teacher as a guide and counselor in the learning situation. Resources have not been previously available to implement fully the student's learning responsibility. Educational technology, learning theory, and learning strategies, however, are now being sufficiently developed to enable the introduction of educational innovations into the middle school program, thereby making the placing of learning responsibility possible.

The book is suitable for use in both undergraduate and graduate education courses; in addition, it can be considered a reference book for in-service professionals. It is intended not only to serve as a useful guide for school systems and communities engaged in middle school planning, but also to supply a departure in thinking for the numerous workshops and conferences that are held to plan for middle schools. Since a broad spectrum of reader interest and background is anticipated, highly technical data is avoided, yet an effort is made to provide sufficient detail about staff, program, and plant to stimulate the professional educator. The first two chapters are directed primarily toward persons who have only limited background concerning the middle school. The last chapter should intrigue the student readers and give the professionals cause to re-evaluate their educational forecast for the post-1975 period.

The writer is indebted to numerous persons for helpful suggestions, encouragement, and advice in the scoping and structuring of the book. Among those persons to whom the author is especially obligated are Dr. Margaret Mead, Dr. Stuart E. Dean, Dr. Robert L. Walter, and Dr. William L. Carter.

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# 4 Middle School Program Aspects

## Planning the Curricula

A paramount objective of the middle school is to further the self-development of its students in the several academic disciplines, study skills, problem analysis, and problem-solving areas. Programmed activities are required to accomplish the objectives. To guide middle school planners in their program formulation, a number of premises concerning the middle schools are predicated. Planned activities and events that lie beyond the premises are eliminated after consideration and investigation. They are purposely made general to stimulate the ingenuity of professionals and still furnish program stability. The middle school premises serving as guides to programing are the following:

*The worth of the individual student.* Certainly the uniqueness of each student must be considered and his opinions and contributions respected and honored. Oth-



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erwise how else can the student generate a self-image that is acceptable to himself? The middle school creates the nurturing climate required to permit the development of self-reliant attitudes and confident approaches to problem formulation and decision-making.

*Self-determination of the student in the learning environment.* The learning environment can be contrived to produce or shape learning but the student becomes a partner in his own success, accepting the responsibility for learning. He should be neither coerced nor cajoled into taking action. His determination for future learning should rest in his own hands. The middle school must provide the learning support required for self-determination in backing up decisions.

*Student involvement with change.* Change is a way of life in the middle schools. As childhood is left behind and early adolescence approaches, student needs change from security to love, affection, and self-realization. Middle school planning must acknowledge the existence of change and provide for it. Provision for this must be made in such a manner that the student can discover himself, his peers and his physical-socio-economic environment, and relate the discovery to his past cultural heritage as well as to a projection forward into the world of tomorrow.

*Decision-making is a natural facet of the growing-up process.* The middle school places high value upon self-determination and worth of the student. When such value is established, the assumption is that the student has the capability for making his decision known and the opinion stated. To make a rational determination requires the ability to define the problem, treat it in a scientific manner, and to select an optimum solution within the problem restraint bounds. The middle school must provide its students with access to the tools for

decision-making and offer opportunities for developing decision-making skills.

*Learning situations—singular and groups.* The middle school does not follow a monolithic approach to the learning situation. While individualized learning is paramount, the learning situation may involve group activities as well as the one-to-one relationship. In group situations, uniform standards of achievement are not sought for all students. The group is utilized not because its method of instruction is considered to be a more economical or efficient means for providing education, but because the group situation offers students those learning opportunities beyond the scope of one-to-one relationships. Students have the chance to gain confidence in decision-making capability through comparison of their problem approaches with those of their peers. Group situations afford the means for broadening conceptualization and for crystallizing thoughts.

*Growth is discernible.* Students begin to mature into pre- or early adolescents during their middle school enrollment periods. The manner in which the changes occur can be observed, recorded and possibly measured, when adequate measuring devices are available or can be constructed. Changes having casual relationships or those which can be directly associated with the middle school plan are identified as criteria within the restraint levels prevailing; the effectiveness of the middle school can be ascertained by reviewing criteria changes related to a specific student. Decision-making skills and mathematical and communication capabilities may be among the criteria to be developed for a given student. By reviewing student documentary data for initial criteria level, changes from the given levels can be observed. Inferences can be drawn concerning student progress, need for changing the curriculum, need for auxiliary study, and

effectiveness of the middle school per student resource expenditure. Unless the curriculum does include provision for student growth evaluation, it is only partially complete.

## Middle School Curricula

We speak of the middle school curricula for each middle school student as learning programs at a given point in time. The content of the curricula differs from the traditional elementary and junior high schools. Elementary and junior high school curricula are constituted of subject matter placed there for such reasons as difficulty of content, state requirements, textbook writers, tradition, and opinions of curriculum committees. The result of these curricula practices tends to be a fragmented collection of content with individual parts of the curricula becoming ends in themselves. The matter is presented, studied, evaluated, and grades recorded to indicate student exposure to particular content without clear-cut objectives being achieved for the total curriculum.

The curriculum in the middle school is designed to accomplish the long-range objectives of fostering the spirit of inquiry and development of problem analysis/decision-making capabilities. The particular content of the curricula is *that content which the students and professional staff members working with the students determine.* The rapid accumulation of data today makes it inadvisable to concentrate upon the learning of factual information whose usefulness has a limited life expectancy. Rather, the emphasis must be placed upon stimulating the student to investigate the various disciplines, to question what he finds, to conceive new approaches to persistent problems, to evaluate proposed courses of action, and to decide which direction technological, political, economic, and social developments should take.

The middle school attempts to encourage the growth of individualism through returning to America's students a part in determining their educational programs. When the child

enters middle school, he should have acquired some proficiency in the three "R's." The student is ready to participate in his curriculum planning. To be sure, during his early days at middle school the professionals will exercise considerable influence upon the student's program direction. However, as the student continues in middle school, ever increasing responsibility for selecting where his learning efforts will be focused rests upon the student. The student decides where his inquiry leads him.

The curricular frame of reference for middle school is composed of the four disciplines: social science, science, mathematics, and language arts. Also included are the concomitant areas such as unified arts, foreign language, music, and physical education. Within the disciplines, there is no formal breakdown into courses such as science 6, 7, 8, and 9, or topics restricted by age of students or number of years in school. Each discipline is an entity that can be studied from many aspects; for example, hygiene, physical and natural, is an aspect of science. Note, these are not divisions but merely a classification useful for discipline structuring purposes. The professional staff members organize their disciplines so that students can identify and work toward the accomplishment of management tasks. The staff—utilizing its own expertise and availing itself of the findings of the many discipline experts now engaged in determining the elixir of their specialities—formulates learning programs adaptable to the learning situation requirements of the individual student.

The middle school finds many practices and activities of the traditional schools incongruous with its objectives. Included among the unacceptable practices and activities are self-contained classrooms, the use of professionals to teach one or two subjects such as seventh grade geography, disregard of individual student interest, use of grades as motivation, acceptance of fact regurgitation as evidence of learning, and interscholastic athletics. Other nonacceptable practices and activities can be identified, but the delineation of an

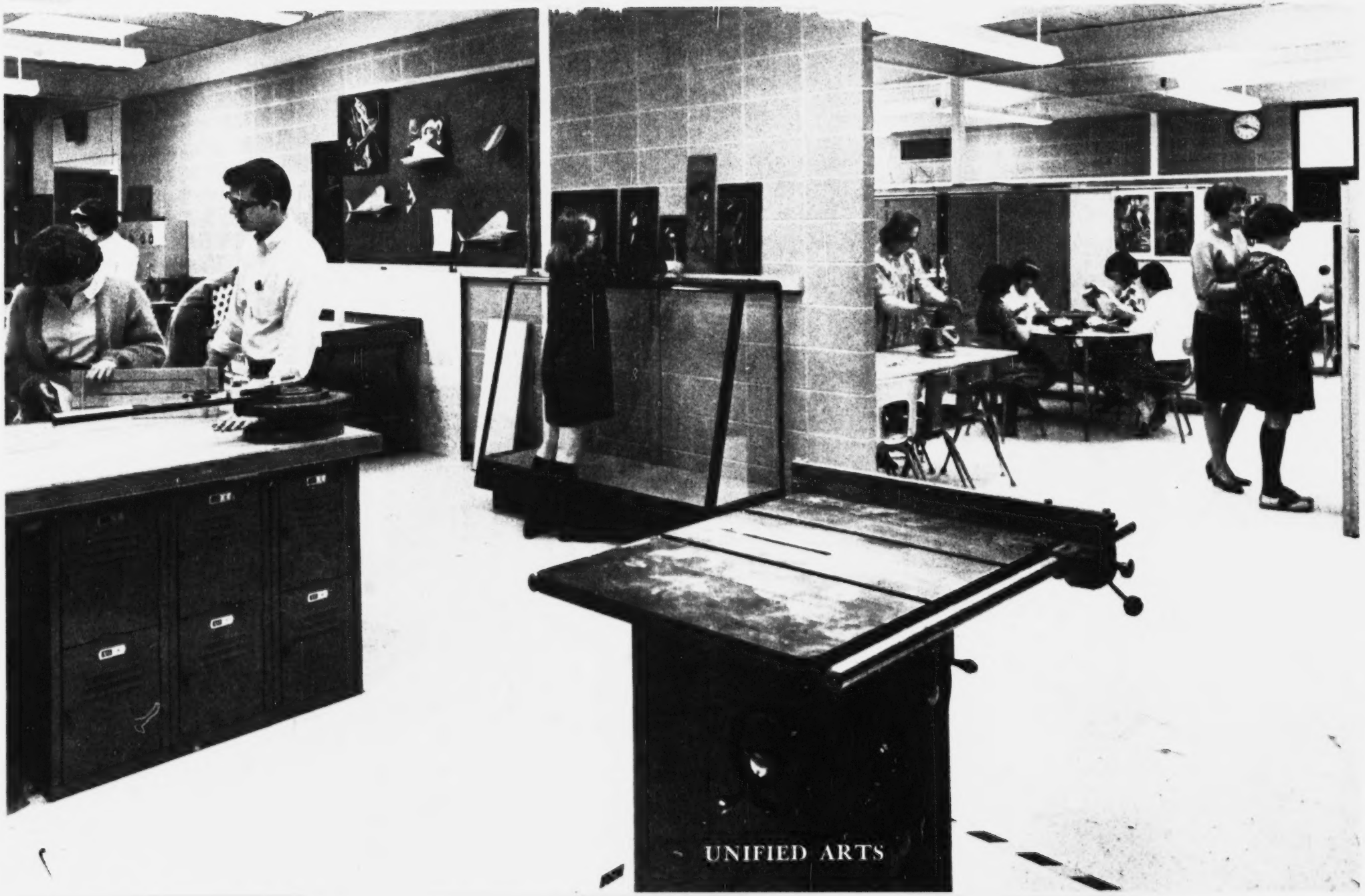
exhaustive list serves no substantial purpose. The essence of the matter is that middle school practices and activities do differ from the other schools. Practices and activities in the middle school are discussed throughout the book. Details of program structure and organization in a number of middle schools are afforded in sequential paragraphs.

**Fox Lane Middle School.** The staff at Fox Lane implements a unified arts program that offers homemaking, woodworking, ceramics, fine arts and music. The work of students flows through all five disciplines as a project is pursued. Teaching teams are composed of professionals from each discipline. Planning is a mutual experience between students and team members. Opportunities are provided for students to work on projects of personal interest. The accompanying photograph shows some of the girls at work in the unified arts center.

Since the teaching team is concerned with the problem of those students who tend to work exclusively in the areas of highest interest, the staff at Fox Lane has found it necessary to require students to have some experience in each discipline. To further stimulate participation in other disciplines, the staff strives to develop many suggested activities that require work in all areas.

The unified arts program at Fox Lane seeks to provide broad exploratory experiences rather than levels of skills in limited areas. In the unified arts program, students enjoy the thrill of exploring the areas of beauty, creativity and reality without the pressure of tomorrow. By the existence of a permissive environment, students change from being reluctant to show art work because of possible ridicule to being eager to have their work displayed or placed in an art festival. They develop a willingness to talk about what they see or feel in a particular piece of their work. Art becomes something to discuss and to share with others both in and out of school.

Each child has his place in the program, and progresses at


UNIFIED ARTS

his own rate. He is permitted to work in an atmosphere free from the pressure to keep up with other students.

The Fox Lane program is directed toward the individual. No attempt is made to keep the students in groups who share similar ability or interest. The individual is the relevant *one* for instructional purposes.

**Valley Green Middle School.** Valley Green has a unique mathematical program which features team teaching, ungrading and individualized instruction for its 800 students in the nominal 10 to 14-year-old age group. No mathematics curriculum exists in the traditional sense. For example the curriculum, or rather curricula, for a given year cannot be written down precisely between the covers of a document entitled "Mathematics, Grades 5-8." Curricula evolve as the capabilities and skills of the students are determined. The tentative curriculum is composed by talented members of a professional mathematics team.

Mathematical instruction at Valley Green begins at the existing level of a student's accomplishments. When a new student enters the school, a series of diagnostic inventories are given to determine his abilities in such subject matter as addition, subtraction, multiplication, division, algebra, geometry, and related items. The school needs to ascertain where the student stands relative to a topic. Several days later after the inventory is completed, team members analyze the results to determine possible programs that might be formulated for the student.

Formulation of a student program does not follow immediately from determination of test results—in fact, it is not formulated until the team members and the student have had an opportunity to know one another. It is in this particular area that Green Valley is different from other schools. Determining a student's capabilities in a given discipline can be fairly readily accomplished with the analytic devices available today.

An anecdote, concerning a Valley Green student, is indicative of the necessity for consideration of auxiliary factors

when formulating student programs if student cooperation is to be assured. When John entered Valley Green, he was 13 years old, 6′0″ tall and weighed almost 200 pounds. He was well-liked by his peers, but displayed an indifferent attitude toward school. Mathematical diagnostic testing revealed capabilities about equivalent to those of an entering 10-year-old. The professional mathematical team to which John was assigned questioned the validity of his test scores. The team therefore recommended that a detailed program be temporarily delayed. Finding that John had established rapport with a science teacher, an arrangement was made for the teacher to utilize John's abilities during the period previously designated for math. Through his science work, John soon realized that a knowledge of arithmetic and algebra were essential to progress in science. He established contact with his mathematical team which had received reports from the science teacher concerning John's increasing interest in math. The team encouraged John to go through diagnostic testing once more. The results were quite different from the original test scores. The staff was able to confidently develop an initial math program. John could now work in this program with the feeling that the activities involved were developed particularly for him. And, you know—John was right.

The preparation of math programs is a major task for the several math teaching teams. The magnitudes of the task arise from the requirement to tailor math programs to fit capabilities of individual students. A logical framework is developed to cover the middle school math objectives, but fine differences in depth and concept, based upon individual capabilities, necessitate program individualization for each student. The task calls for teachers who are highly qualified in mathematical knowledge, possessed of extraordinary understanding of the learning process, and more than willing to accept the challenge of the toughest of programming tasks.

Curriculum content at Green Valley consists largely of self-study materials. The student works alone using such

study aids as work sheets, individual texts, programmed books, taped lessons played on cartridge-loading type tape recorders, and disc record players. The photograph shows two middle school students working independently on their math programs.

The student is assisted by the teaching team during his individual study. As blocks are encountered in pursuing the learning program, the team prepares supplementary routines that provide additional experience in the problem area, seeks to help the student find alternate approaches to combat learning difficulties, and conducts group sessions involving both large and small numbers of students when significant problems are encountered.

The math curricula at Valley Green make student progress monitoring mandatory, in order to ascertain the *rate* of progress. Opportunities for progress monitoring are many: during the frequent student-teacher conferences, from evaluation of student analytical ability by teaching teams in the science and social studies areas, and through a rigorous diagnostic testing program. Diagnostic testing instruments are composed of both staff and commercial types.

A further benefit accrues from the monitoring process in terms of effect upon the professional staff. At Valley Green teachers are guides. When the student fails to make recognizable progress toward a designated goal, the teacher guide and the student should both shoulder the responsibility. This is the feeling maintained by the administrative and professional staff at middle school. Consequently, when the rate of student progress reaches a plateau or perhaps even declines, the effectiveness of the learning program for that student becomes suspect. The professional staff is obligated to review carefully the learning program involved and to ascertain what factors can be changed to improve program worth to the student.

**Belle Vista.** Foreign language instruction at the Belle Vista Middle School *extends* the communicative capabilities of the students—it is not an "extra." The need to communicate

INDEPENDENT STUDY IN MATH

more effectively becomes more stringent with each new breakthrough in transportation technology. The development of supersonic transport makes all regions of the earth accessible within a matter of hours. Middle school students will have the opportunity for travel never dreamed of by previous generations. The middle schooler needs to be aware of the changing nature of his physical-economic world—to be given the opportunity to determine whether he wishes to broaden his communicating capability, or to restrict himself in this respect. He should be helped to see that self-imposed limitations on information exchange can well be serious obstacles for future career opportunities.

At Belle Vista, foreign language instruction helps the students' audiolingual mastery of the language they choose. Languages offered are not restricted to the common classical ones. Learning is based upon the premise that the first phase of the learning of language is verbal—speaking the language and listening to it as it is spoken by persons with well modulated voices that pronounce words and enunciate syllables in the manner deemed to be correct in the foreign language country. The accompanying photograph shows several students listening in a foreign language study to the language of interest to them. Sound is provided through the media of tapes, cartridges and records. The potential for the studio as a foreign language instructional device is self-evident.

The foreign language curriculum at Belle Vista, and the math curriculum at Valley Green, consists of as many individual curricula as there are students participating. The broad curriculum framework provides a sequential program covering the four-year middle school period. Students entering the program at any time begin where their capabilities permit. Curriculum content includes audio tapes, film strips, cartridges, readers, texts, teacher-generated materials, and visiting linguists.

At Belle Vista, there was a student who had spent several years with his parents in South America and who spoke

LANGUAGE LABORATORY

flawless Spanish. He served as a small group instructor and produced many recordings and tapes that were used by fellow students in their individual learning programs.

The rewards of language learning sometimes occur much earlier to middle schoolers than anticipated. One Belle Vista student, after spending approximately one year in a Spanish curriculum where the audio-lingual approach was accentuated, decided to switch to a French program. Recently he spent a summer in Europe and discovered that he could converse in both languages. Upon his return to school, he related the experience to his fellow students with great enthusiasm. It can be anticipated that similar travel opportunities will be available to increasing numbers of middle schoolers in future years.

## A Midwest Middle School Begins

A growing community in a midwestern state decided to open a middle school. Its school district was composed of a high school and several elementary schools. When the policymakers decided to build a new high school, the old building became a regional school housing grades five through eight and was designated as a middle school. The planning which followed placed grades five and six in self-contained classrooms and departmentalized grades seven and eight. Special subject teachers and a counselor were provided to assist the teachers in grades five and six. The building contained facilities for physical education, industrial arts, home economics and a science laboratory. The professional staff was composed of former elementary teachers who taught the self-contained classrooms plus those who had taught grades 7 and 8 in the former high school.

After one year at middle school, the staff felt that by combining resources it could do a better job of teaching. Before embarking upon this new venture, the staff prepared a detailed plan composed of the following:

Familiarization with literature discussing team teaching and non-graded schools.

Visits to schools where team teaching could be observed.

Attendance at university conferences dealing with team teaching and non-graded schools.

Invitation of consultants to the school to work with the staff in large/small group situations and in individual conferences. Consultants were provided for the following topics:

Team teaching
Individualized Reading
New English Program
Developing Social Studies Programs
How to Use Texts
Climate for Creativity
Individualizing Instruction
Organizing for Learning

The plan was carried out over several months. After the meetings with the consultants, the staff held a series of meetings to discuss ideas about team teaching and non-grading. The meetings disclosed that:

Some professional staff members were afraid to depart from their current modes of teaching.

Some staff members preferred to take a passive role until they had an opportunity to observe fellow staff members working in teaching team and non-grade situations and were able to evaluate activity results.

Some staff members straddled the fence. They suggested that a limited course of action be followed re team teaching and non-grading. Activity should be restricted to a few tryout areas.

Some staff members became avid middle school concept disciples through participating in planned activities. These staff members advocated the use of interdiscipline team teaching and non-grading in all school areas.

What had the look of an impasse situation was quickly resolved by the assistance of staff professionals skilled in group dynamics techniques. Through their efforts negotiations were effected that eventually resulted in three-fourths

of the professional staff members joining teaching teams and dedicating themselves to the formulation of curricula framework.

While the professional staff was orienting itself to the middle school, activity was proceeding swiftly in another area where people play a vital role. The P.T.A. was the vehicle used to prepare the community for the initiation of team teaching and non-grading into the middle school. A one-year training period was devoted to developing a P.T.A. committee that could be counted upon to support the middle school objectives. Four meetings, spread throughout the year, were for the P.T.A. executive group and a P.T.A. representative from each homeroom. The group, some 60 members strong, was shown movies and slides from schools utilizing team teaching and non-grading. Discussions were held based on the information observed, and questions were promptly answered. Members of the executive committee visited schools.

During the course of the training, the P.T.A. nucleus generated a list of questions which they felt would be of common interest to other parents concerning the middle school concept. The questions included:

1. How does the elimination of the class grade structure affect the performance of the individual student?
2. What attributes of the non-graded school make it superior to the graded school structure?
3. What problems can be anticipated when a child enters a school employing the middle school concept from a conventional graded school, and likewise, what problems are anticipated when a child leaves a school employing the middle school concept and returns to the graded school?
4. What are the inherent strong and weak points in the middle school concept?
5. What unique provisions must middle school have to make team teaching effective?

Six weeks before the opening of the school, letters announcing a meeting were received by parents whose children

would enroll in middle school in September. The purpose of the meeting, which was sponsored by the P.T.A., was defined as being primarily to answer enclosed questions about the middle school objective to be further implemented at the middle school. Data sheets containing information pertinent to the questions were distributed by the committee as parents entered the meeting place. The information explained the nature of the committee's experience during the past year, and how the questions had been formulated. Questions were answered by middle school professional staff members. The purpose of the meeting was fully achieved.

Two weeks before the beginning of the school year, those members of the professional staff involved in implementing the middle school objectives completed their analysis of the records of students likely to enroll in middle school. An initial group was selected to participate—it was decided that the problem of attempting to bring all middle school students into the program at once would overtax the capacity of the staff. Letters were sent to notify parents of the selection of their child to participate in the program, and to request that they agree or disagree with the proposed selection. The decision of the parents was accepted.

The professional staff at Eden Heights middle school had many problems during that first year of implementing the middle school objectives, but it was agreed that the task had been made easier by the careful attention given to the factor of *people* involved before actual implementation was initiated.

## Student Programming

Innovative practices need to be included in student programming. The use of a flow network has been found useful in planning and implementing programs for the middle school. There is no intent to allege that middle school is the only school where this technique can be employed.

The particular emphasis on programming is that of including the student in the activities. The teaching teams and

the student are co-architects of the student's program. As staff member plans the program with the student, they participate together in the learning situation in a student-guide relationship, and they jointly evaluate progress and then reprogram. As the program is planned, the student is not restricted to a traditional lock step—that algebra may be studied only in his last year in middle school; rather the student may begin his study of algebra at any point where he and the team determine he is ready.

The professional staff will not always find traditional and formal courses of study and guides of much value. Rather they will find that developing materials to fit the particular student is the most valuable way of assisting with his continuous learning program.

Included on each teaching team will be staff members for each of the different disciplines. With the expert knowledge of each of the members, they will function cooperatively in the programming process. The recommended staff organization for a middle school is shown in Figure 4-1. A detailed description of the staff was provided in Chapter 3.

Among the purposes which the logic breakdown chart serves are (a) causes the discipline expert to break down his area into logical discussions, sub-divisions, elements, sub-elements, etc. down to the *nth* information or skill level requisite to initial discipline activity, (b) causes the discipline expert to become aware of the necessity for being able to support learning activities from the *nth* level upward to the highest event level that a particular middle schooler may be capable of reaching, (c) makes it possible for any middle schooler to begin work in a discipline at a level where progress is possible and (d) makes possible student-teacher programming in a discipline since the point at which the student is capable of selecting obtainable objectives and the point at which the expert can furnish sufficient learning support to insure those learning objectives can be ascertained.

Having developed a logic breakdown chart, the team professional is ready to construct flow networks with his students. The flow network provides a means for tying events

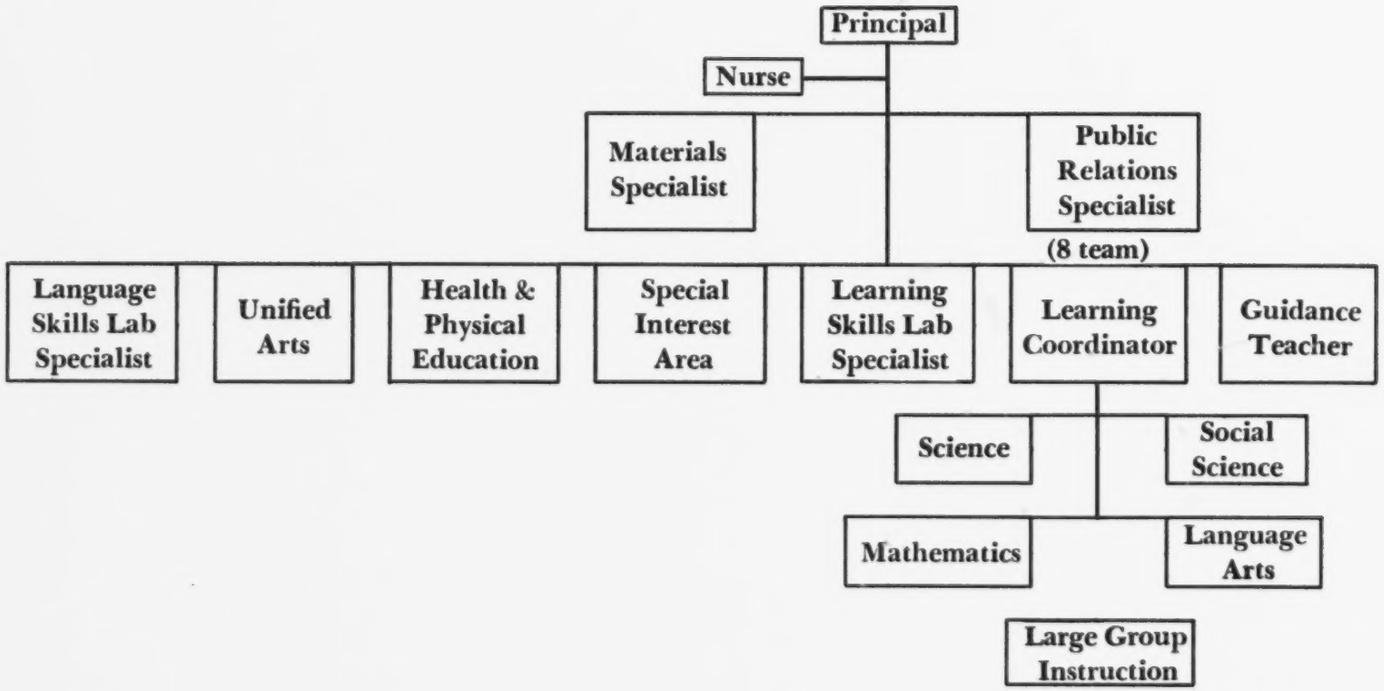
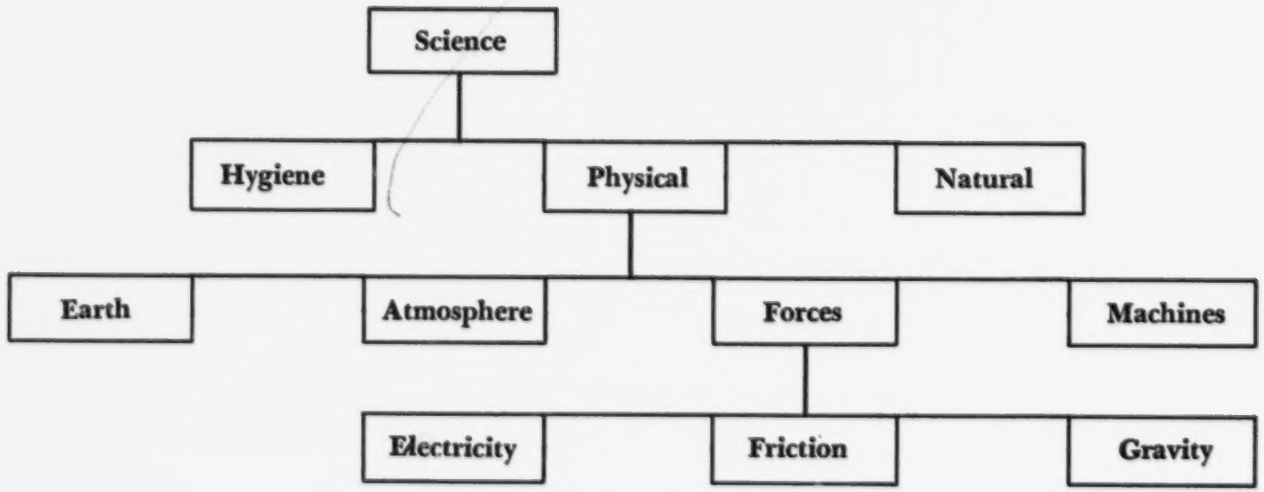



**Figure 4-1** *Middle school staff organization chart.*




Application of flow networks to student programming. Flow networks are constructed and employed as described herein. The teaching team professionals begin by developing logic breakdown charts to the nth level (by the nth level we have reference to the lowest level required for a particular entering middle schooler to engage in learning activities for that given discipline.) To clarify the process for the reader, an example of a science logic breakdown chart to the fourth level is provided in figure 4-2. The nth level for a particular student could well be several unknown levels of event below the fourth.

**Figure 4-2** *Science logic breakdown chart.*

together in time sequence order. An example from science is provided to introduce the reader to the use of the flow network in programming.

Suppose it has been determined by the professional that the student is capable of working at the 4th event level in Figure 4-2. If the student and professional agree that the student acquire an understanding of direct current electricity, the following simplified series of events would require completing in order for the objectives relative to electricity to be accomplished:

1. Learning about batteries completed
2. Learning about resistance completed
3. Learning about circuits completed
4. Learning about motors completed
5. Learning about radio completed

The events are placed in a network with the events that require learning in sequence indicated in a series path and those which may be completed simultaneously in parallel paths. The flow network of our illustration appears as shown in Figure 4-3.

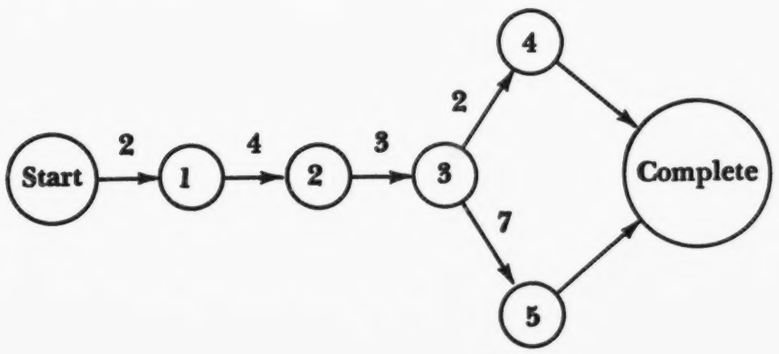



**Figure 4-3** *Flow network—direct current electricity.*

The number in the circle refers to the completed events identified above. The arrows between the circles indicate

activities that are undertaken in order to complete the event. The estimated times and the actual times may be included in the diagram by placing the estimated time above the arrow and the actual time below. In our example it is estimated that it will take 2 weeks to complete the activities in connection with event number one. The estimated time to complete the whole network is 16 weeks. Flow networks may be developed for any and all levels of a logic breakdown chart. Figure 4-4 shows the complexity involved as higher levels are included. A complete network for a total discipline includes all activities and events. Programming through the use of complicated networks becomes difficult when over 100 events and activities are included if the work is done entirely by hand. However, the task becomes easier when a digital program is available. Use of the computer makes tracking of student progress in a network fast and effortless. Computer printouts are available to reflect an infinite number of relationships pertinent to student activity. The flow network is consequently an invaluable tool for student programming in middle school.

## Student Scheduling

Scheduling involves time. When schedules are constructed, time is the independent variable. Events and activities plotted against time are the dependent variables. All persons are influenced by schedules. A typical school calendar shows events and activities that are fixed with respect to time.

How efficient is the calendar from the individual staff member's point of view? Do vacations occur at a time which will enable the staff member to maximize his vacation hours? Are workshops and conferences held when they prove most useful? If the answers to the questions are no, then valuable resources—human resources—are being wasted.

The school calendar topic was raised to initiate thinking along this particular line. Scheduling is defined as the order-

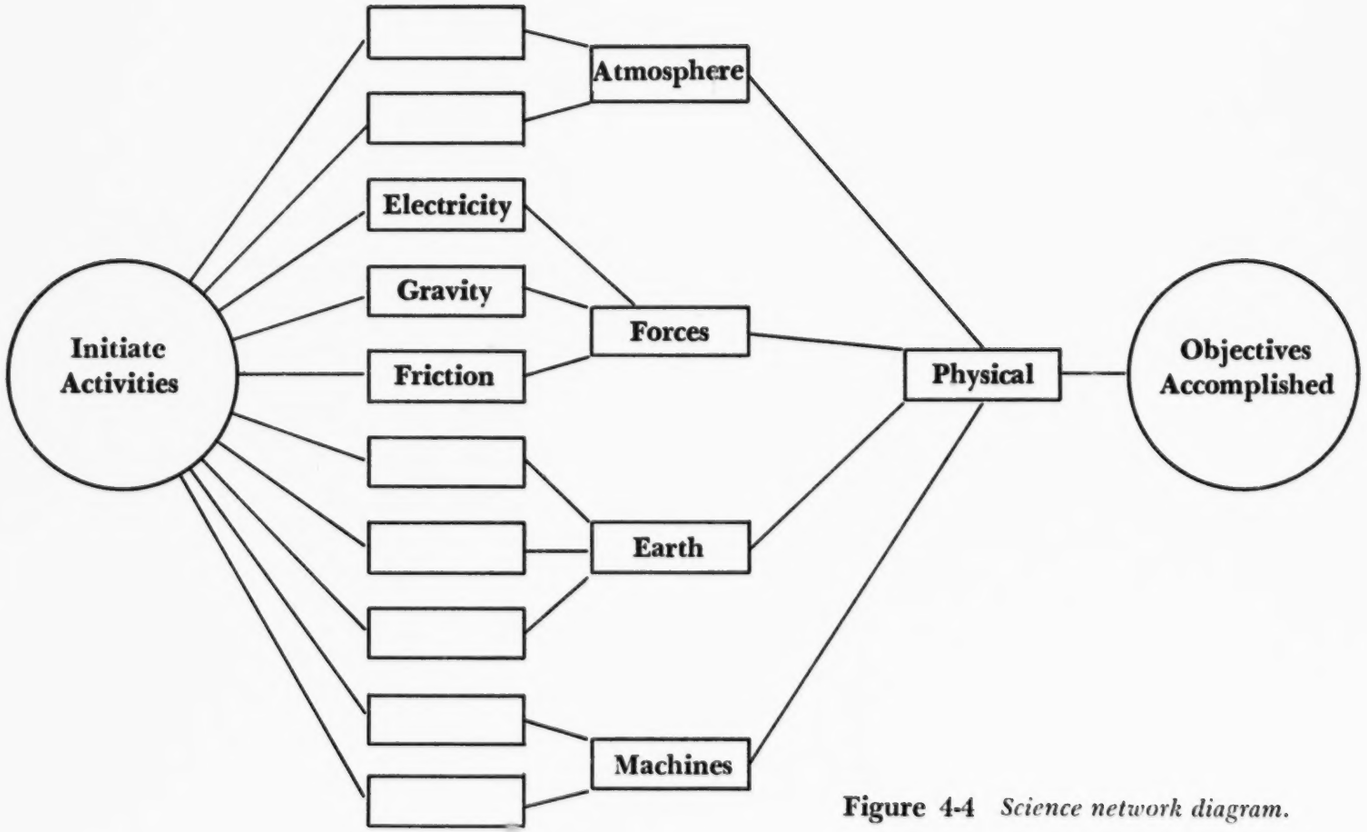



**Figure 4-4** *Science network diagram.*

ing of school resources to support students in learning situations. This connotation of scheduling may be new to you. School scheduling has a tendency to be accomplished in the school calendar fashion. The criterion for middle school scheduling is the efficiency of resources used in the learning situation. Resource efficiency may be described as the use of resources in such a manner that all students are being supported in learning situations to such an extent that further assistance in the learning situation can only be provided by increasing the resources available to the school. School resources are buildings, grounds, facilities, personnel and money.

At middle school, resources are supplied to the learning situation as required. If there are 800 students in a middle school, at a given point in time, 800 unique schedules will exist. Schedules are but working tools to assist the learner and the staff in bringing order into the learning environment. The schedule guides the student in allocating time among activities and enables the staff to accomplish scheduling objectives.

The schedule is but a tool. When a tool is improperly selected to accomplish a job, the worker has no hesitancy in selecting another which is better designed to do the task. So it is with student schedules. The student schedule is formulated by the staff and the student, after review of the student's progress on his learning network. Assumptions were made that the schedule contained the optimum activities to be undertaken at the given time. The staff's level of confidence in its assumptions increases as greater understandings are obtained about the students early in their middle school years. A neophyte at Eden Heights recorded 17 schedule changes within a single school year.

The statement was made that if there were 800 students in middle school, at any given point in time, there would be 800 different schedules. Since the student population is divided among several teams, a teaching team is not assigned

more than 90-100 students. The number of individual schedules for the teaching team is of a manageable size.

Scheduling of resources to meet student requirements is accomplished through daily team meetings. The length of the meeting is a function of teaching team experience and student capabilities. Usual team meetings take one to two and one-half hours. Meetings consider common matters of concern such as providing mutual teacher assistance, the operating of large group classes and laboratory use as well as evaluating individual student progress and planning for future adjustments to the student's schedule. The progress rate of several students is reviewed daily. The team tries to review every assigned student at least twice during a four-week period.

The teacher's daily schedule in middle school reflects the application of resources to learning situations as required. Time must be provided in the schedule for activities ranging from those tutorial in nature to the instruction of large groups. Whatever the nature of the activity, it is being conducted at the given time because of the need of the students for teacher support. The activity performed is the one that maximizes the use of teacher and time. An Eden Heights language art teacher's schedule is presented for a particular day. The teacher is a member of teaching team Y. The particular day was a point in time 16 months distant from the time that 90 students arrived at middle school from several surrounding neighborhood elementary schools. You are invited to compare the daily schedule shown with schedules of junior high school language arts teachers whom you know. The difference of the middle school scheduling concept will be brought home vividly to you.

**A Language Arts Teacher Schedule**

| | |
|---|---|
| 8:00 | Work with three students who are writing a play. |
| 8:40- 9:00 | Work with 5 students initiating topics of American Folklore. |

9:00- 9:30 Moderate small group discussion considering the difference between the folk tale and literary versions of tales by Irving, Twain and Sandburg—12 students.

9:30- 9:45 Work with a student who has written a legend about a famous American hero of modern times, intended to be read in the year 2100.

9:45-10:00 Work with 5 youngsters who are having trouble communicating through written work.

10:00-11:00 Teaching Team Planning Meeting.

11:00-11:30 Lunch.

11:30-12:00 Serve as discussion leader for a group of 25 students who are reviewing a novel from the standpoint of theme, character, plot and setting.

12:00-12:30 Participate in discussion with four students who have read Esther Forbes' biography, *Paul Revere and the World He Lived In.*

12:30- 1:15 Meet with Social Studies teacher and a group of 35 students and serve as group assistant to the social studies teacher.

1:15- 2:00 Work with 10 students who are having trouble researching a topic.

2:00- 3:10 Planning period (Maybe!)

3:10- 3:30 Meet with a student for individualized reading.

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